draws near, it is in many cases possible to discern through the thin, yet tough and hard, outer walls of the chrysalis the spots and colors on the wings of the insect.

FIG. 27.—Chrysalis of

Duration of Pupal Life.—Many butterflies remain in the chrysalis stage only for a few weeks; others hibernate in this state, and in temperate climates a great many butterflies pass the winter as chrysalids. Where, as is sometimes the case, there are two or three generations or broods of a species during the year, the life of one brood is generally longer than that of the others, because this brood is compelled to overwinter, or hibernate. There are a number of butterflies known in temperate North America which have three broods: a spring brood, emerging from chrysalids which have overwintered; an early summer brood; and a fall brood. The chrysalids in the latter two cases generally represent only a couple of weeks at most in the life of the insect. In tropical and semi-tropical countries many species remain in the chrysalis form during the dry season, and emerge at the beginning of the rains, when vegetation is refreshed and new and tender growths occur in the forests.

FIG. 28.—Chrysalis of the Tiger Swallowtail Butterfly (*Papilio asterias*)

The Transformation from the Chrysalis to the Imago.—The perfectly developed insect is known technically as the *imago.* When the time of maturity in the chrysalis state has been reached, the coverings part in such a way as to allow of the escape of the perfect insect, which, as it comes forth, generally carries with it some suggestion of its caterpillar state in the lengthened abdomen, which it with apparent difficulty trails after it until it secures a hold upon some object from which it may depend while a process of development (which lasts generally a few hours) takes place preparatory to flight. The imago, as it first emerges, is provided with small, flaccid wings, which, together with all the organs of sense, such as the antennae, require for their complete development the injection into them of the vital fluids which, upon first emergence, are largely contained in the cavities of the thorax and abdomen. Hanging pendant on a projecting twig, or clinging to the side of a rock, the insect remains